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Setup Start

[REDACTED]

Stop

**Cust Item ID:**

1. **Introduction**

2. **Background**

3. **Methods**

4. **Results**

5. **Conclusion**

6. **References**

7. **Appendix**

8. **Table 1**

9. **Table 2**

10. **Table 3**

11. **Table 4**

12. **Table 5**

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Customer:

Reference:

Run Start

Date: 11-04-20 Tooling:

Date:

Stop

RESEARCH DESIGN AND METHODS

QC:

Date:

SPC (Y/N):

Date:

**Insp.
Stamp**

Revision Nbr

D3021

Rev A

0.00

0.00

100

Large Fab

Large Fab

Large Fab

Memo

1-Cut tube as per Dwg D3021

2-Drill tube as per Dwg D3021 using D8622

3-Deburr

4-Weld as per Dwg D3021 QSI004

A/R 4130 Rod Batch: M102226

0.00

0.00

110

[illegible]

QC

Quality Control

QC9- Inspect visual per QSI004- Fusion Welds

Memo

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 68732

Wednesday, April 20, 2011 11:16:02 AM



Page 2

Item ID:	D3021-041	Accept		Setup	Start	
Revision ID:					Stop	
Item Name:	Tube Assembly					
Start Date:	4/20/2011	Start Qty:	1.00		Cust Item ID:	
Required Date:	4/25/2011	Req'd Qty:	1.00		Customer:	
Reference:						

Approvals:	Process Plan:	Date:	Tooling:	Date:	Run	Start	
	QC:	Date:	SPC (Y/N):	Date:		Stop	

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120 QC Quality Control	QC5- Inspect part completeness to step on W/O Memo	0.00 0.00							
130 Powdercoat Powder Coating	Grey Sandtex(Ref:4.3.5.6) per QSI005 4.3 Memo START TIME: 11:30 OVEN TEMPERATURE: 320°F FINISH TIME: 12:00	0.00 0.00							
140 QC Quality Control	QC3- Inspect Part Finish Memo	0.00 0.00							

8/10/05

(X)

(IX) & m-l 11/05/06

(1)

SAD
11-05-06

M115128

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 68732

Wednesday, April 20, 2011 11:16:02 AM

Page 3

Item ID: D3021-041

Accept

Revision ID:

Item Name: Tube Assembly

Start Date: 4/20/2011 Start Qty: 1.00

Required Date: 4/25/2011 Req'd Qty: 1.00

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

150



Packaging

Packaging

Identify as per dwg & Stock Location: *GA*

0.00

Memo

0.00

160



QC

Quality Control

QC21- Final Inspection - Work Order Release

0.00

Memo

0.00

*EP 11/05/10 @**11/5/11**W 11.05.10*

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Wednesday, April 20, 2011 11:16:09 AM

Page 1

Work Order ID: 68732

Parent Item: D3021-041

Parent Item Name: Tube Assembly

Start Date: 4/20/2011


Required Date: 4/25/2011

Start Qty: 1.00

Required Qty: 1.00


Comments: IPP 01.10.23 New Issue SM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
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D3017-11		Manufactured	No			100	Each	12.0000	2	2			
													
cap													

Location	Loc Qty	Loc Code
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WA019	12	
52583	12	

M4130NT0.750W.049		Purchased	No			100	f	85.2300	2.0833	2.192947			
													

4130 RD Tube .750 x.049W

Location	Loc Qty	Loc Code
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MAT033	85.23	
10133	10.73	
110740	74.5	

2.08

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

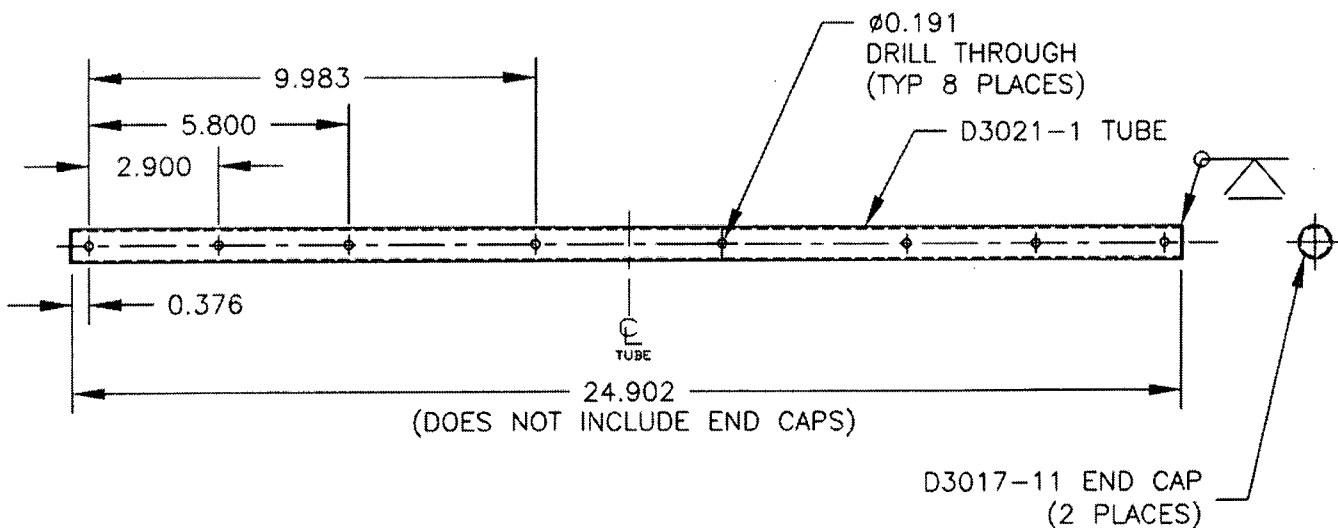
NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



DESIGN <i>CP</i>	DRAWN BY <i>CP</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>#</i>	APPROVED <i>#</i>	DRAWING NO. D3021	REV. A SHEET 1 OF 1
DATE 01.05.18		TITLE TUBE ASSEMBLY	SCALE 1:4
A	01.05.18	NEW ISSUE	

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RETURN TO
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UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 68732 *PL11-04-20*



D3021-041 TUBE ASSEMBLY
(D3021-1 TUBE)

NOTES:

- 1) PART IS SYMMETRIC ABOUT CENTERLINE
- 2) MATERIAL: AISI 4130 TUBE, $\phi 0.75$ DIA x 0.049 WALL (M4130N-T0750W049)
- 3) WELD PER DART QSI 004
- 4) FINISH: POWDER COAT GREY SANDTEX (REF 4.3.5.6) PER DART QSI 005 4.3
- 5) ALL DIMENSIONS ARE IN INCHES
- 6) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.

RELEASED
01.05.30 *9*

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W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE		By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries